Overview

Air separation plants are used to separate the atmospheric air into its various primary components like nitrogen, oxygen, and other inert gases. The most common method for air separation is cryogenic distillation. Cryogenic air separation units (ASUs) are built to provide gases such as nitrogen, oxygen, carbon dioxide, argon, hydrogen, helium, and acetylene. Air separation plant has seen a rise in demand across various industries such as food & beverages, Automotive, paper & pulp, healthcare.

The global air separation plants market is poised to grow over USD 6,636 million by 2025 at an estimated CAGR of 5.02% through the forecast period.

The global air separation plant market is very dynamic and is expected to witness high growth over the forecast period. The growth of the air separation plant market is influenced by product innovations & technologies. Furthermore, an increase in the demand for industrial & specialty gases; has led to the emergence of Asia-Pacific as the fastest growing region. Industrial gas plays an essential role in the country’s progress. Some of the industrial gases such as nitrogen, oxygen, argon, LNG, and liquefied petroleum gas are condensed at high pressure for ease of storage and transport activities. It is used in a vast number of industries such as steelmaking, pharmaceuticals, petrochemicals, and food & beverages. Moreover, rapid industrialization in emerging economies and rising use of industrial gases in the solar PV industry and developing innovative technologies are expected to fuel the market demand during the forecast period.

However, the cost involved acts as a barrier to the market. The cost of electricity is the most significant operating cost incurred in air separation plants. Electric motors used for compression equipment, heaters, and cooling system also add to the cost incurred. Moreover, the high price of laser and infrared technology-based devices for operation tracking in plants for more accurate and efficient solutions will increase the overall value of the air separation plants. These factors are expected to restrain the growth of the global market during the forecast period.

The global Air separation plants market is expected to witness significant growth during the forecast period. In 2018, the global Air separation plants market was led by Asia-Pacific followed by North America and Europe. In Asia-Pacific, the growing demand for industrial gases with high purity level from end-use industries such as oil & gas industry, chemicals, and petrochemicals. Moreover, stringent safety and environmental regulations in the healthcare sector and as well as increased demand for photovoltaic products, is driving the need for air separation plants, in the Asia-Pacific region.

North America is referred as one of the leading manufacturers and distributors of high purity oxygen, cylinder filling plants and different gas generator for medical, industrial and other applications, for instance, Linde North America is investing in a site that has a new gasification train and ancillary equipment and facilities. This expected to increase the demand for air separation plants in the region during the forecast period.

Segmentation

The global air separation plants market has been segmented based on type, process, gas,
The global air separation plants market by type has been segmented into under 20000 m³/h, 20,000-40,000 m³/h, 40,000-80,000 m³/h, and more than 80,000 m³/h. Among these types, in 2018, the global market was led by 20,000-40,000 m³/h segment and is projected to lead throughout the forecast period. The 20,000-40,000 m³/h capacity type is used for air separation purposes. These are majorly used in the heat treatment process, welding, pulp & paper industry, the steel industry where certain gases that will react with and degrade the product, are removed. This expected to enhance the demand for the 20,000-40,000 m³/h capacity type air separation plants in the global market during the forecast period.

Based on the process, the market has been segmented into the cryogenic distillation process and non-cryogenic distillation process. Among these processes, the cryogenic distillation process has accounted for the largest market share, followed by the non-cryogenic distillation process. Cryogenic distillation process separates oxygen from air by liquefying air at shallow temperature. Cryogenic air separation process relies on the differences in boiling points to separate air and purify into the desired gas supply and liquid products, such as oxygen, nitrogen, argon. It is used in medium to large scale plants to produce nitrogen, oxygen, and argon, as gases or liquid products. Moreover, all plants producing liquefied industrial gas products utilize cryogenic technology process, which enhanced the global market size for the air separation plants in 2018 and further expanding plants producing liquefied industrial gas is expected to raise the demand for the cryogenic technology process in the global market during the forecast period.

On the basis of gas, the global air separation plants market has been segmented into nitrogen, oxygen, and others. In 2018, the oxygen segment dominated the market and projected to be dominant throughout the forecast period. The oxygen (O2) is an active, life-sustaining component of the atmosphere. It is colorless, odorless and tasteless & has poor solubility in water. The largest consumer of oxygen is the steel industry. Moreover, Oxygen has numerous uses in steelmaking and other metals refining and fabrication processes which are used in chemicals, pharmaceuticals, petroleum processing, glass, and ceramic manufacture and pulp and paper manufacture.

On the basis of application, the global air separation plants market has been segmented into chemical, oil & gas industry, paper, metallurgy, and others. In 2018, the metallurgy segment dominated the market and projected to be dominant throughout the forecast period. Gases act as a manufacturer of casting molds to enhance their hardness. Moreover, they are also used to melt the steel and other metals and work as a shielding gas in the heat treatment of iron, steel, and other metals. The largest user of oxygen is the steel and metal industry. They are used to cool materials which are heat sensitive or soft at room temperature. Thus, these factors and features are expected to lead the global market growth for air separation plants during the forecast period.

Key Competitors
The key players of the global air separation plants market are Linde AG, Air Liquide SA, Praxair, Inc., Air Products and Chemicals, Inc., Taiyo Nippon Sanso Corporation, Messer Group GmbH, Universal Industrial Gases, Enerflex Ltd., Technex Ltd., and Gas Engineering LLC.

Regional Analysis:
On the basis of region, the global air separation plants market is segmented into North America, Europe, Asia-Pacific (APAC), and the rest of the world (RoW).

Global Air Separation Plants Market, by Region, 2018
Europe is referred to as one of the leading markets for air separation plant under segments such as by process and by gas. European governments such as that of France and Germany, devote a large share of spending on infrastructure and as well as on innovations in current technology for reducing capital costs and driving up process efficiency, for instance, a European supplier of industrial and medical gas products, provides ULTRA-AL merchant air separation plants. This influence the demand for air separation plants market in the region.

The Rest of the World includes countries such as the Middle East & Africa and South America. The Middle East & Africa is growing owing to the growth in the Metallurgy industry, which mainly drives the market growth for air separation plant during the forecast period.

Synopsis

The global air separation plants market has been segmented based on type, process, gas, application, and region. On the basis of type, the market has been segmented into under 20000 m3/h, 20,000-40,000 m3/h, 40,000-80,000 m3/h, and more than 80,000 m3/h. Among these types, the 20,000-40,000 m3/h segment is projected to be dominant throughout the forecast period. Additionally, the 20,000-40,000 m3/h section has also registered as the fastest growing segment. On the basis of process, in 2018, the cryogenic distillation process segment was dominated by the global market followed by the non-cryogenic distillation process. On the basis of gas, the oxygen segment is projected to be dominant throughout the forecast period. On the basis of application, the metallurgy segment is expected to be dominant throughout the forecast period. On the basis of region, Asia-Pacific has accounted for the largest market for air separation plants market followed by North America and Europe.

Market Segmentation

- By Type: Under 20000 m3/h, 20,000-40,000 m3/h, 40,000-80,000 m3/h, and More Than 80,000 m3/h
- By Process: Cryogenic distillation process and non-cryogenic distillation process
- By Gas: Nitrogen, oxygen, and others
- By Application: Chemical, oil & gas industry, paper, metallurgy, and others

Key Questions Addressed by the Report

- What was the historic market size (2018) growth?
- Which segmentation (type/process/gas/application) is driving market growth?
- What will be the growth rate by 2025?
- Who are the key players in this market?
- What are the strategies adopted by key players?
Infographic Summary:

Contents:

## TABLE OF CONTENTS

- 1 INTRODUCTION
  - 1.1 Definition 14
  - 1.2 Scope of the Study 14
  - 1.3 Assumptions 14
  - 1.4 Market Structure 14

+ 2 RESEARCH METHODOLOGY

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GLOBAL AIR SEPARATION PLANT MARKET

The global air separation plant market is expected to reach USD 6.636 million by 2025.

Global Air Separation Plant Market Share, by Region, 2018

North America
Europe
Asia-Pacific
Rest of The World

DRIVERS:
- Advancement in terms of product innovation & technologies
- Growth in the demand for industrial & specialty gases

RESTRANTS:
- High operational and technological cost
- Availability of skilled labor

KEY PLAYERS:
- Linde AG
- Air Liquide S.A.
- Praxair, Inc.
- Air Products and Chemicals, Inc.
- Tokyo Nippon Sanso Corporation
- Messer Group GmbH

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<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 MARKET DYNAMICS</td>
</tr>
<tr>
<td>4 MARKET FACTOR ANALYSIS</td>
</tr>
<tr>
<td>5 AIR SEPARATION PLANT MARKET, BY TYPE</td>
</tr>
<tr>
<td>6 AIR SEPARATION PLANT MARKET, BY PROCESS</td>
</tr>
<tr>
<td>7 AIR SEPARATION PLANT MARKET, BY GAS</td>
</tr>
<tr>
<td>8 AIR SEPARATION PLANT MARKET, BY APPLICATION</td>
</tr>
<tr>
<td>9 AIR SEPARATION PLANT MARKET, BY REGION</td>
</tr>
<tr>
<td>10 COMPETITIVE SCENARIO</td>
</tr>
<tr>
<td>11 COMPANY PROFILES</td>
</tr>
<tr>
<td>12 LIST OF TABLES</td>
</tr>
<tr>
<td>13 LIST OF FIGURES</td>
</tr>
</tbody>
</table>